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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,567	12/21/2001	Bill Engst	A8224	3671

7590 03/27/2003

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Washington, DC 20037-3213

EXAMINER
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BETTENDORF, JUSTIN P

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 03/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/024,567

Applicant(s)

ENGST, BILL

Examiner

Justin P. Bettendorf

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

*Specification*

1. The disclosure is objected to because of the following informalities: On page 6, line 24 presently reads as "Figure 23" which is confusing because there is no figure 23. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 9, 13, 14, 15, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Harrison United States Patent No. 5,781,085 (cited by the applicant).

The Harrison reference discloses in figure 1 a cavity filter and method of tuning with two cavities shown separated by walls 44a, 44b with resonators 3, 4 including a inductive coupler iris I2 and capacitive cross-coupler 54 that is changed by the movement of the threadedly engaged tuning screw 53 for the inductive coupling in the filter housing (col. 8, lines 1-11 and 66-67). Figure 16 shows a filter cover. With respect to claim 15, figure 17b,c shows the tuning screw in the filter cover (see col. 14, lines 17-35).

4. Claims 1, 2, 3, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Fiedziuszko United States Patent No. 4,453,146.

Figure 1 of Fiedziuszko discloses a cavity filter 10 with a housing 28 shown and cover (not shown - see col. 3, lines 15-19) with separate cavities 12 divided by walls shown with a plurality of resonators 20. An inductive coupler is formed by iris 30 that is adjacent to capacitive

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cross-coupler 22 that is insulated by dielectric sleeve 24 that is in the notch 34 (that is inherently removable fixed because it is disclosed as being fitted) of the iris 30 (see col. 4, lines 30-37).

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4-8 and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fiedziuszko in view of Harrison.

As noted above, the Fiedziuszko reference discloses a cavity filter in figure 1 that suggests using inductive and/or capacitive coupling probe that may bifurcate the inductive coupling slit (see col. 4, lines 63-67) between adjacent filter cavities based on the desired design (col. 5, lines 48-60). The reference teaches tuning that may be accomplished by other art-recognized equivalent means (see col. 6, lines 13-34). However, the reference does not teach that there is inductive tuning (e.g. claims 4, 13, 17) that affects the capacitive coupling nor does it explicitly state that 3<sup>rd</sup> and 4<sup>th</sup> resonators are inductively coupled (e.g. claim 12).

As noted above, the Harrison reference teaches using a threadedly engaged tuning screw in either the cover or side wall to affect the inductive coupling and thus the capacitive coupling in order to tune the filter over a wide range (see above rejection; col. 3, lines 38-63; col. 4, lines 23-35; and the abstract).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have added tuning as taught by Harrison to the filter of Fiedziuszko because

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such a modification would have been considered a mere substitution of art-recognized equivalent filter tuning means that would have advantageously allowed adjustment of the resonant frequency over a large range as taught by Harrison.

With respect to inductively coupling between the third and fourth resonators (claim 12), such a modification would have been obvious based on the desired frequency response as suggested by Fiedziusko.

*Conclusion*

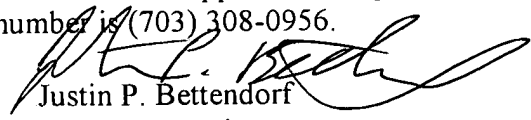
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Madrangeas et al. "Analysis ... Dielectric Resonator Microwave Filters" discloses in figure 2 a cavity filter with inductive and capacitive coupling between each of the adjacent resonators.
- b. Smith United States Patent No. 6,255,919 B1 discloses a dielectric resonator cavity filter with tuning screws from the cover.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin P. Bettendorf whose telephone number is (703) 308-2780. The examiner can normally be reached on 6:00-3:30 (M-F, 1st Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
Justin P. Bettendorf  
Primary Examiner  
Art Unit 2817

jpb  
March 20, 2003